Product Information

Anti-TREK-1

produced in rabbit, affinity isolated antibody

T6448

Synonym: Anti-Potassium Channel $K_{2P}2.1$

Product Description

Anti-TREK-1 is produced in rabbit using as immunogen a synthetic peptide (DPKSA AQNSK PRLSF STKC) corresponding to the intracellular amino terminus of human TREK-1, amino acid residues 8-28. The antibody was affinity isolated on immobilized immunogen.

Anti-TREK-1 reacts with rat TREK-1 by immunoblotting using rat membranes. It is expected that the antibody will also react with mouse due to sequence homology (17/18).

The action of potassium (K^+) channels is regulated by voltage, calcium and a variety of neurotransmitters. Each subfamily generally consists of a primary pore forming α subunit that is associated with several regulatory subunits.[1] To date, some 70 different genes that encode the α subunits of K^+ channels have been identified.

The vast family of K^+ channels has been subdivided into the three main subfamilies: the 2 TM, 4 TM and 6 TM K^+ channels.[2] TREK-1 ($K_{2P}2.1$) is a member of the 4 TM potassium channel family, proteins that contain two-pore domain and four transmembrane domains. These channels are considered to be "leak" or "background" K^+ channels, thereby generating background currents which help set the membrane resting potential and cell excitation.[3] K_{2P} channels can be activated by a wide variety of stimuli including polyunsaturated fatty acids, low intracellular pH, and mechanical stretch.[4,5] TREK-1 is highly expressed in the central nervous system and may have a possible role in ischemic neuroprotection.[6]

Reagent

Supplied as a lyophilized powder from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 0.05% sodium azide.

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the lyophilized vial with either 0.05 mL or 0.2 mL deionized water, depending on the package size. Further dilutions should be made using a carrier protein such as BSA (1%).

Storage/Stability

Store at -20 °C. For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing. Storage in "frost-free" freezers is not recommended. Centrifuge before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: the recommended working dilution is 1:200.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Alexander, S.P., et al., Guide to receptors and channels, 1st edition, *Br. J. Pharmacol*., **141,** Suppl 1: S1-S126 (2004).
2. Gutman, G.A., et al., Compendium of voltage-gated ion channels: potassium channels, *Pharmacol. Rev.*, **55**, 583-586 (2003).
3. Lesage, F., Pharmacology of neuronal background potassium channels, *Neuropharmacology*, **44**, 1-7 (2003).
4. Kim, D., Fatty acid-sensitive two-pore domain K+ channels, Trends Pharmacol. Sci., **24,** 648-654 (2003).
5. Franks, N.P. and Honore, E., The TREK K2P channels and their role in general anaesthesia and neuroprotection, *Trends Pharmacol. Sci*., **25,** 601-608 (2004).
6. Buckler, K.J. and Honore, E., The lipid-activated two-pore domain K+ channel TREK-1 is resistant to hypoxia: implication for ischaemic neuroprotection, *J Physiol*., **562,** 213-222 (2005).

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at SigmaAldrich.com/techservice.

Standard Warranty

The applicable warranty for the products listed in this publication may be found at SigmaAldrich.com/terms.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.

T6448 dat Rev 04/22